



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/088,560	07/18/2002	Nicolas Amouroux	ATOCM 254	6602

23599 7590 09/03/2003

MILLEN, WHITE, ZELANO & BRANIGAN, P.C.  
2200 CLARENDON BLVD.  
SUITE 1400  
ARLINGTON, VA 22201

EXAMINER

KEEHAN, CHRISTOPHER M

ART UNIT	PAPER NUMBER
----------	--------------

1712

DATE MAILED: 09/03/2003

7

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/088,560

Applicant(s)

AMOUROUX, NICOLAS

Examiner

Christopher M. Keehan

Art Unit

1712

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 18 July 2002.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 3 and 4 is/are allowed.
- 6) ☒ Claim(s) 1,2,5-13 and 15-20 is/are rejected.
- 7) ☒ Claim(s) 14 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 6.
- 4) ☐ Interview Summary (PTO-413) Paper No(s) \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

### **DETAILED ACTION**

Note: on page 9, line 29 of the disclosure, applicant refers to a patent number US-A-626 396, which appears to be incorrect. It is possible that applicant is referring to EP 0626 396. Also, in claim 6, the use of the word "advantageously" appears to be unclear. Perhaps deleting this word entirely or changing "advantageously between" to -about- or something along those lines would be helpful. Finally, it is suggested to change the claim language in claim 19 from "wherein the tube is in accordance with claim 18" to -wherein the tube comprises a coated metal surface in accordance with claim 18-- for further clarification.

### ***Claim Objections***

Claims 12 and 14 are objected to because of the following informalities: The acronyms "PVDF" and "VF2-HFP" should be defined to further clarify the claim.

Appropriate correction is required.

### ***Claim Rejections - 35 USC § 112***

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 10, 11, 16, and 20 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claims 10 and 20 recite the limitation

Art Unit: 1712

"the oil" in claim 1. There is insufficient antecedent basis for this limitation in these claims.

***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1, 2, 8, 12, 13, and 17 are rejected under 35 U.S.C. 102(b) as being anticipated by Carson et al. (4,720,405). Regarding claims 1 and 2, Carson et al. disclose a coated metal surface (Example 1) comprising, successively, a layer of epoxy primer on the metal (col.5, line 32-col.6, line 14), a layer of binder comprising a mixture of at least one fluoropolymer (col.9, lines 9-16) in an amount included in the instantly claimed range (col.8, lines 34-39) and an acrylic polymer (col.9, lines 9-16) in an amount included in the instantly claimed range (col.9, lines 6-11), and a layer of a fluoropolymer on this layer (col.10, lines 3-22).

Regarding claim 8, Carson et al. disclose a layer containing an acrylic polymer which is a copolymer of methyl methacrylate and of an acrylic acid (col.8, lines 53-60).

Regarding claim 12, Carson et al. disclose the instantly claimed polymers (col.8, lines 18-34 and col.10, lines 18-21).

Regarding claim 13, Carson et al. disclose that the fluoropolymer is baked at a temperature of about 200°C to about 260°C (paragraph bridging columns 9 and 10),

Art Unit: 1712

which indicates that the melting point of the fluoropolymer would have to be higher than this range, which is higher than the temperature as instantly claimed.

Regarding claim 17, Carson et al. disclose wherein the metal is steel (Example 1).

### ***Claim Rejections - 35 USC § 102/103***

Claim 9 is rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Carson et al. (4,720,405). Carson et al., as applied to claims 1 and 2 above, are as set forth and incorporated herein. Carson et al. do not appear to disclose the instantly claimed  $T_g$  of the acrylic polymer. However, it appears this is inherently disclosed because the acrylic polymer of Carson et al. is the same as that of applicant, and the same materials would have inherently yielded a polymer with the same  $T_g$ . If not inherent, then it would have been obvious to one of ordinary skill in the art at the time the invention was made for the composition of Carson et al. to have an at least similar  $T_g$ , because the materials of Carson et al. are at least similar to those of applicant's, and at least similar materials would have yielded a polymer with an at least similar  $T_g$ , absent evidence to the contrary.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the

Art Unit: 1712

invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 15, and 18-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Carson et al. (4,720,405). Carson et al., as applied above, are as set forth and incorporated herein. Carson et al. do not appear to specifically disclose wherein the surface is an outer surface of a tube. However, Carson et al. do disclose applying the composition to metal substrates for excellent durability and resistance to weathering and aggressive environments, such as those concerning industrial pollutants and marine environments (col.10, lines 36-45). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have applied the coating of Carson et al. to a variety of metal substrates, including those in the shape of a tube, because industrial pollutants are typically stored or transported in tube-like structures and underwater transportation of fuel or oil, to name a few, typically occurs in tube-like transport lines.

Regarding claim 18, Carson et al. disclose wherein the metal is steel (Example 1).

Regarding claims 19 and 20, the same reasoning as set forth above for claims 15 and 18 also applies to claims 19 and 20, except for the limitation of hot oil and seawater. Carson et al. disclose a marine environment (col.10, lines 36-45), which appears to read on seawater. Regarding the hot oil, Carson et al. disclose industrial pollutants and marine environments (col.10, lines 36-45). As applicant has not defined hot, it appears that in both of these environments one of ordinary skill in the art would encounter hot oil. In both environments, if the oil is not hot, or of an elevated

Art Unit: 1712

temperature, then viscosity increases and it becomes more inefficient to transport the oil.

Claims 5-7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Carson et al. (4,720,405) in view of Wirth et al. (3,874,903). Carson et al., as applied above, are as set forth and incorporated herein. Regarding claim 5, Carson et al. do not appear to specifically disclose a hardener. Carson et al. do disclose a phenolic resin in combination with the epoxy (Example 1). Wirth et al. disclose an article comprising a metal substrate (col.2, lines 22-25) coated with an epoxy primer, and the epoxy primer coated with a layer of a fluoropolymer (Abstract). Wirth et al. also disclose a hardener of phenol for the epoxy resin (col.1, lines 59-64). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made for the phenolic resin of Carson et al. to have acted as a hardener, because Wirth et al. teach that a phenolic resin acts as a hardener when in combination with an epoxy.

Regarding claims 6 and 7, Carson et al. do not appear to disclose the instantly claimed gel time and  $T_g$ . However, it appears this is inherently disclosed because the materials of Carson et al. is the same as that of applicant, and the same materials would have inherently yielded a polymer with the same gel time and  $T_g$ . If not inherent, then it would have been obvious to one of ordinary skill in the art at the time the invention was made for the composition of Carson et al. to have an at least similar gel time and  $T_g$ , because the materials of Carson et al. are at least similar to those of

Art Unit: 1712

applicant's, and at least similar materials would have yielded a polymer with an at least similar gel time and  $T_g$ , absent evidence to the contrary.

***Allowable Subject Matter***

Claims 3 and 4 are allowed. A reasonable search of the prior art of record failed to reveal the limitations as set forth in claims 3 and 4. Regarding claim 3, the prior art of record does not appear to teach or disclose a coated metal surface comprising a layer of a mixture of a fluoropolymer and a fluoropolymer chemically modified by a partial dehydrofluorination, and another layer of fluoropolymer on top of this layer. Barriere et al. (US 2002/0001721A1), which has the same assignee as the instant application, discloses a metal substrate, a layer of a fluoropolymer primer layer comprising a fluoropolymer chemically modified by a partial dehydrofluorination, and a layer of fluoropolymer on this layer. Barriere et al. do not appear to teach or disclose a mixture of a fluoropolymer and the chemically modified fluoropolymer. Regarding claim 4, the prior art of record does not appear to teach or disclose a metal surface with a layer of primer comprising an epoxy and a fluoropolymer chemically modified by dehydrofluorination.

Claim 14 is objected to because of the reasons as stated under Claim Objections, but would be allowable should this be cleared up because it is dependent on allowed claim 3.

Claims 10, 11, and 16 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, second paragraph, set forth in this Office action and to



Art Unit: 1712

include all of the limitations of the base claim and any intervening claims. A reasonable search of the prior art did not reveal the chemically modified fluoropolymer as defined in claim 1.

### **Conclusion**

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Coggio et al. (6,080,487) disclose layer of a fluoropolymer and a layer of a dehydrofluorinated polymer, but disclose a hydrocarbon substrate. Parsonage et al. (6,482,522 B1) disclose a fluoropolymer layer and a layer of a dehydrofluorinated polymer, but do not disclose a metal substrate. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Christopher M. Keehan whose telephone number is (703) 305-2778. The examiner can normally be reached on Monday-Friday, from 6:30 to 3:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert A. Dawson can be reached on 308-2340. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0661.



Robert Dawson  
Supervisory Patent Examiner  
Technology Center 1700

Christopher Keehan 

August 21, 2003